ORIGINAL ARTICLE

Psychological Impacts of COVID-19 on In-patients in a COVID-19 Dedicated Hospital in Bangladesh

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Abstract

Background: COVID-19 is a global pandemic, and the World Health Organization has urged Southeast Asian countries to implement effective measures. However, countries like Bangladesh, with a poorly structured healthcare system and high population density, are struggling to meet these challenges. **Objective:** This study was aimed to assess the psychological impact of COVID-19 on patients at a COVID-19- dedicated hospital. **Methodology:** This cross-sectional study was conducted on 322 patients admitted with COVID-19 at Mugda Medical College and Hospital, a dedicated COVID-19 facility in Dhaka, Bangladesh, from May to June 2020. The Patient Health Questionnaire-9 (PHQ-9) was used to assess depression, the Generalized Anxiety Disorder-7 (GAD-7) scale measured the severity of self-reported anxiety, and the Insomnia Severity Index (ISI) was employed to diagnose self-reported insomnia. **Results:** This study assessed the psychological profiles of 382 patients. According to the PHQ-9 scale, 39.1% of patients had moderate depression, with 60.9% having severe depression. Anxiety levels were measured on the GAD-7 scale at 13.7% for moderate anxiety and 86.3% for severe anxiety. Based on the Insomnia Severity Index, 18.9% of patients suffered mild insomnia, 69.6% moderate insomnia, and 11.5% severe insomnia. **Conclusion:** The study has revealed that a significant proportion of COVID-19 patients experienced mental health disturbances during their hospitalization. It is essential to closely monitor their mental well-being and provide timely interventions. [*Journal of Current and Advance Medical Research, January 2024;11(1):28-33*]

Keywords: Psychological impact; depression; anxiety; insomnia; COVID-19 pandemic; Bangladesh

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Introduction

An infectious disease outbreak such as COVID-19 can cause intense panic across all socio-demographic groups, potentially leading to psychological issues like anxiety, depression, and insomnia[1-3]. In some cases, patients exhibited negative psychological symptoms even after recovering from the acute phase of the infection, such as insomnia, fear, stigmatization, and irrational nervousness[4-5]. A prominent example of these psychosocial impacts, including anxiety, depression, and stress[6], was observed during the

Ebola epidemic outbreak from 2014 to 2016. Additionally, a significant number of milder psychological symptoms, such as obsessive-compulsive behavior, paranoid ideation, loss of appetite, and hostility, were also observed during that time[6-7].

To address the COVID-19 pandemic, various countries implemented a range of health measures, including mandatory quarantines for returning travelers, remote work arrangements, school closures, and the shutdown of non-essential services, all aimed at reducing the risks and impact of the disease[8,9]. Additionally, many people stockpiled items such as surgical masks, rice, toilet paper, and other essentials, disrupting daily life and negatively impacting mental health[10,11]. Documenting the rising percentage of psychological risk factors among people who have been directly or indirectly exposed to life-threatening events is critical for understanding how people respond to infectious disease epidemics in their communities[7,12-14].

A range of psychological risk factors affecting a significant portion of the community can disrupt the daily functioning of individuals and result in immediate social and economic consequences, including reduced job productivity and financial difficulties[14,15]. Maintaining the psychological well-being of the community through effective mental health interventions is essential to prevent disruptions in healthcare delivery during outbreaks[14]. During this global pandemic, the World Health Organization (WHO) urged Southeast Asian countries to implement effective measures[16-18]. Countries like Bangladesh, which have a lackluster healthcare system and a high population density, are making efforts to mitigate these issues[3,7,19]. This study sought to highlight the psychological impact on impacted patients in a hospital of Bangladesh.

Methodology

Study Design and Settings: This hospital-based cross-sectional study was conducted to assess the psychological impact of COVID-19 on patients at a COVID-19- dedicated hospital named Mugda Medical College and Hospital, Dhaka, Bangladesh.

Data Collection Procedures: During the study period from May to June 2020, a total of 322 patients who met the selection criteria and agreed to participate were included as study participants. Data

was collected through face-to-face interviews conducted by trained medical personnel. All recruited participants were inpatients diagnosed with COVID-19, with a hospital stay of three or more days, and aged 18 years or older. Patients were excluded if they had any of the following conditions: unstable vital signs, mechanical ventilation, SpO_2 levels below 95% while on oxygen therapy, impaired consciousness, dementia, or severe psychotic disorders.

Data Collection Tools: Data was collected using a pretested semi-structured questionnaire. The Patient Health Questionnaire-9 (PHQ-9) was used in this study to identify probable cases of depression and assess symptom severity over the past two weeks. The Generalized Anxiety Disorder-7 (GAD-7) scale was utilized to measure the severity of self-reported anxiety. Additionally, the Insomnia Severity Index (ISI) was used to diagnose self-reported insomnia and evaluate symptom severity during the previous two weeks.

Statistical Analysis: The data were checked and cleaned before being categorized, coded, and entered into IBM SPSS v25 software. Descriptive analysis and inferential statistics were conducted to evaluate the significance of associations, with a p value of <0.05 at a 95.0% confidence interval considered statistically significant.

Ethical Approval: All procedures were carried out in accordance with the ethical guidelines established by the Institutional Review Board at Mugda Medical College Hospital, Bangladesh (Reference: MUMC/2020/613). All procedures were conducted according to the guidelines of the Declarations of Helsinki 1964.

Results

According to the PHQ-9 scale, the results indicated that 39.1% of participants experienced moderate depression, while 60.9% suffered from severe depression. The GAD-7 scales results showed that 13.7% of individuals had moderate anxiety, and 86.3% reported severe anxiety. Based on the ISI, 18.9% were classified as mild insomniacs, 69.6% as moderate insomniacs, and 11.5% as severe insomniacs.

The prevalence rates for severe levels of depression and anxiety were 60.9% and 86.3%, respectively. No significant psychological impact was found with the presented variables (Figure I).
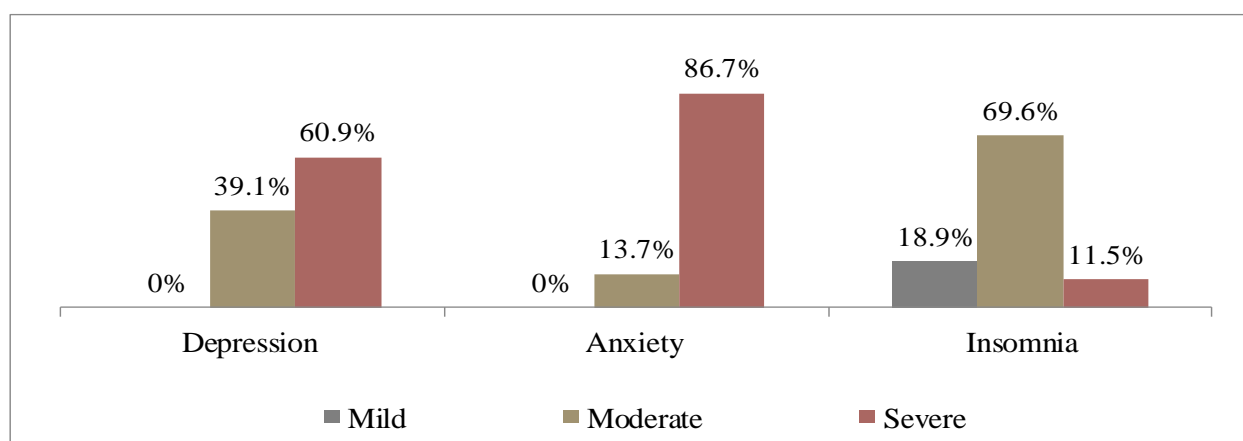
Figure I: Prevalence of Depression, Anxiety and Insomnia (n=322)

The results present the psychological health and well-being scores (PHQ-9, GAD-7, and ISI) categorized by patient profile, including demographic factors, COVID-19 severity, and comorbidities. The mean age of the respondents was approximately 46.3 years (SD = 15.3), with ages ranging from 18 to 85 years. The male-to-female ratio was 1:0.94 (males: 51.6%, females: 48.4%). Around 14.9% of the respondents were healthcare professionals, including approximately 8.1% doctors, 3.1% nurses, and 3.7% other healthcare workers. Based on the respondents' medical history, it was found that the majority had comorbidities (206, 64.0%). Among these, the most common conditions were hypertension (101, 31.4%) and diabetes (99, 30.7%), followed by chronic kidney disease (49, 15.2%), asthma (43, 13.4%), and cardiovascular diseases (28, 8.7%). Additionally, they were more likely to experience in-hospital complications, including pneumonia (71, 22.0%), acute respiratory distress syndrome (ARDS) (47, 14.6%), anemia (20, 6.2%), shock (18, 5.6%), and acute renal failure (12, 3.7%) (Table 1).

Table 1: Association of Psychological Health and Well-Being Scores with Patient Profile (n=322)

Variables	n(%)	PHQ-9		GAD-7		ISI	
		Mean±SD	t/F; p	Mean±SD	t/F; p	Mean±SD	t/F; p
Gender							
Male	166(51.6)	16.7±4.7	t=-	16.1±1.6	t=0.643	17.0±3.9	t=0.520
Female	156(48.4)	17.0±4.6	0.723 p=0.698	16.0±1.7	p=0.930	16.8±3.8	p=0.613
Age Group							
18 to 35 Years	97(30.1)	17.0±4.9	F=1.166	15.8±1.8	F=1.481	17.2±3.5	F=1.390
36 to 55 Years	142(44.1)	16.4±4.7	p=0.323	16.2±1.5	p=0.220	16.5±3.9	p=0.246
56 to 75 Years	75(23.3)	17.4±4.4		15.9±1.8		17.2±4.0	
More than 75 Years	8(2.5)	18.6±3.6		16.0±1.7		18.6±4.0	
Religion							
Islam	292(90.7)	16.8±4.7	F=0.230	16.1±1.6	F=3.446	17.0±3.9	F=0.497
Others	30(9.3)	17.2±4.5	p=0.632	15.5±2.0	p=0.064	16.5±3.5	p=0.481
Education							
No formal education	32(9.9)	16.8±4.5	F=0.216 p=0.885	16.1±1.7	F=1.261 p=0.288	16.3±4.1	F=0.874 p=0.455
SSC & below	154(47.8)	16.8±4.8		16.0±1.6		16.9±3.8	
HSC & below	42(13.0)	17.4±4.2		15.6±2.0		17.7±3.9	
Graduation & above	94(29.2)	16.8±4.8		16.1±1.5		16.9±3.7	
COVID-19 severity							
Mild	81(25.2)	16.1±5.0	F=1.557	16.0±1.7	F=0.593	16.4±3.7	F=1.225

Variables	n(%)	PHQ-9		GAD-7		ISI	
		Mean±SD	t/F; p	Mean±SD	t/F; p	Mean±SD	t/F; p
Moderate	99(30.8)	17.2±4.5	p=0.212	15.9±1.8	p=0.553	17.0±4.0	p=0.295
Severe	142(44.1)	17.1±4.6		16.0±1.5		17.2±3.7	
Co-morbidity							
Present	206(64.0)	16.7±4.6	t=-	16.0±1.7	t=0.166	16.9±3.9	t=-0.017
Absent	116(36.0)	17.2±4.7	0.972	16.0±1.5	p=0.051	16.9±3.7	p=0.447
			p=0.681				
Duration of hospital stay							
Less Than 7 Days	36(11.2)	16.3±5.0	F=0.261	15.9±1.7	F=0.349	15.7±4.0	F=2.853
7 to 14 Days	150(46.6)	16.9±4.6	P=0.771	16.0±1.8	P=0.705	16.8±3.9	P=0.059
More Than 14 Days	136(42.2)	17.0±4.6		16.1±1.5		17.4±3.7	

Table 2: Correlations within age, duration of hospital stays, PHQ-9, GAD-7, and ISI scores (n=322)

Variables	Age	Duration of Hospital Stay	PHQ-9 Scores	GAD-7 Scores	ISI Scores
Age	1	-0.039	0.059	0.030	0.035
Duration of hospital stay		1	0.005	0.073	0.066
PHQ-9 scores			1	-0.445[**]	0.640[**]
GAD-7 scores				1	-0.283[**]
ISI scores					1

**Correlation is significant at the 0.01 level (2-tailed).

Table 2 depicted the correlations within age, duration of hospital stays, PHQ-9, GAD-7, and ISI scores. No significant association was found.

Discussion

In the present study, 39.1% of the respondents had moderate depression and 13.7% had moderate anxiety. The prevalence of depression was significantly higher than that reported in prior studies[20]. A meta-analysis evaluating the combined prevalence of depression in communities across multiple countries[21], from 1994 to 2014 found a lifetime prevalence rate of 10.8% cases. The prevalence of depression in the current study was higher than that reported among healthcare workers in Wuhan[22], where the prevalence was found to be 13.5% cases. Additionally, a meta-analysis examining the prevalence of anxiety disorders in mainland China from 2000 to 2015 reported a lifetime prevalence of 4.7% for generalized anxiety disorder[23]. Besides, our findings were also consistent with previous studies which found that exposing public health emergency[23] such as Ebola outbreak[24], earthquakes[25] and SARS[26] can cause mental health issues.

In response to the ongoing COVID-19 crisis, the local government implemented measures such as closing schools and non-essential businesses, banning large gatherings, enforcing quarantines for individuals traveling from abroad, and promoting social distancing[5,19]. As a result, people were required to remain at home for most of the day throughout the pandemic. In this context, it is important to consider that consistently linked social isolation and loneliness to poor mental health outcomes[7,27]. Another analysis found that quarantines during disease outbreaks might lead to poor mental health outcomes due to variables such as frustration, boredom, a lack of necessary resources, and insufficient information[28]. Another possible explanation for the decline in mental health during COVID-19 is the phenomenon of information overload, characterized by contradictory messages from various international and local authorities, experts from different fields, and the mass media[29]. A recent study conducted in China found that increased exposure to social media was associated with a higher likelihood of experiencing anxiety, as measured by the GAD-7 scale[18].

Previous research has demonstrated that indirect exposure to mass trauma through the media can result in post-traumatic stress disorder[7,30,31]. A previous study in South Korea found an association between social media exposure and the emergence of risk perceptions during the Middle East respiratory syndrome coronavirus epidemic[32]. The importance of studying mental health during the

COVID-19 pandemic has been acknowledged, particularly among those affected, who are known to be more vulnerable to depression, anxiety, and other stress-related conditions[3-7,33]. The study found that a significant portion of respondents experienced moderate depression and anxiety. This is consistent with the impact of public health emergencies, like COVID-19, on mental health, where social isolation, quarantines, and information overload contribute to poor mental health outcomes.

There were a variety of shortcomings in our study. Due to restraints on contact with COVID-19 patients, the study was undertaken at a single center with a small sample size. To strengthen our findings, a multicenter study with a larger sample size is needed. Additionally, the outcomes were based on self-reported a questionnaire, which introduces the potential for recall bias.

Conclusion

The findings of this study revealed that a significant number of COVID-19 patients experienced mental health disturbances during hospitalization. It is crucial to closely monitor these patients' mental well-being and provide timely interventions. Factors such as gender, disease duration, length of hospital stay, and self-perceived illness severity may help identify vulnerable patients in need of psychiatric care and support.

Contributions to authors:
Conceptualization, methods and literature reviews: Hossain I, Mullick AR, and Nurunnabi M; Data collection: Mullick AR, Nandy S, and Shahin M; Statistical analysis: Hossain I, Mullick AR, and Nurunnabi M; Draft manuscript: Hossain I, Koly KN, Mullick AR, Nandy S, Shahin M, and Nurunnabi M. All the authors work and approved the final manuscript.

Data Availability
Any inquiries regarding supporting data availability of this study should be directed to the corresponding author and are available from the corresponding author on reasonable request.

Ethics Approval and Consent to Participate
Ethical approval for the study was obtained from the Institutional Review Board. As this was a prospective study the written informed consent was obtained from all study participants. All methods were performed in accordance with the relevant guidelines and regulations.

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